

**What is claimed is:**

1. A method for dynamically displaying and adjusting a product expiration date comprising the steps of:
  - attaching an expiration date display to a product, the expiration date display
  - identifying the expiration date for the product;
  - setting a default expiration date for the expiration date display;
  - sensing one or more environmental conditions relevant to expiration of usefulness of the product; and
  - adjusting the expiration date on the expiration date display responsive to the one or more sensed environmental conditions.
2. The method of claim 1 further including the steps of:
  - setting a use limitation trigger condition;
  - determining whether the sensed one or more environmental conditions meets the use limitation trigger condition; and
  - displaying a use limitation message when the use limitation trigger condition is sensed.
3. The method of claim 2 further including the step of setting two use limitation trigger conditions for the same environmental condition, between which there is an acceptable use range, and wherein the step of determining further includes determining whether the environmental condition meets either of the use limitation triggers outside of the acceptable use range.
4. The method of claim 1 further including the step of setting an environmental condition trigger point, and wherein the step of adjusting the expiration date includes commencing with said adjusting the expiration date upon sensing that the one or more environmental conditions have reached the environmental condition trigger point.

5. The method of claim 4 wherein the step of sensing one or more environmental conditions includes sensing opening of a container.
6. The method of claim 5 wherein the step of sensing opening of the container includes sensing that an electrical circuit has been broken by opening the container.
7. The method of claim 4 wherein the step of adjusting the expiration date includes extending the expiration date and shortening the expiration date depending on the sensed environmental condition.
8. The method of claim 4 wherein the step of setting the default expiration date includes selecting the default expiration date by assuming that the product will not be subjected to adverse environmental conditions.
9. The method of claim 8 wherein the step adjusting the expiration date includes counting down the expiration date with a clock when an adverse environmental condition is sensed.
10. The method of claim 9 wherein the step of counting down the expiration date includes modulating the clock speed based upon fuzzy logic, linear logic, or lookup tables as a function of the one or more sensed environmental conditions.
11. The method of claim 10 wherein the step of counting down the expiration date with a clock includes adjusting the rate of counting down as a function of a magnitude of the adverse environmental condition.
12. The method of claim 10 wherein the step of counting down the expiration date with a clock includes adjusting the rate of counting down as a function of the duration of the adverse environmental condition.

13. An apparatus for dynamically displaying and adjusting a product expiration date, the apparatus comprising:
- a display showing the expiration date for the product;
  - one or more sensors for sensing one or more environmental conditions relevant to expiration of usefulness of the product; and
  - a controller coupled to the display and the one or more sensors, the controller adjusting the expiration date on the expiration date display responsive to the one or more sensed environmental conditions.
14. The apparatus of claim 13 wherein the controller is programmed with a use limitation trigger condition, the controller determining whether the sensed one or more environmental conditions meets the use limitation trigger condition; and the controller causing the display to display a use limitation message when the use limitation trigger condition is sensed.
15. The apparatus of claim 13 wherein the controller is programmed with an environmental condition trigger point, and the controller adjusts the expiration date when the one or more sensors sense that the one or more environmental conditions have reached the environmental condition trigger point.
16. The apparatus of claim 15 wherein the controller adjusts the expiration date responsive to the sensors sensing opening of a container.
17. The apparatus of claim 16 wherein the one or more sensors include an electrical circuit positioned to be broken by opening of the container.
18. The apparatus of claim 15 wherein the controller further comprises a clock that counts-down the expiration date at a predetermined clock speed when an adverse environmental condition is sensed.

19. The apparatus of claim 18 wherein the clock speed is modulated by the controller based upon fuzzy logic, linear logic, or lookup tables as a function of the one or more sensed environmental conditions sensed by the one or more sensors.
20. The apparatus of claim 19 wherein the clock speed is modulated by the controller as a function of a magnitude of the adverse environmental condition sensed by the one or more sensors.
21. The apparatus of claim 19 wherein the clock speed is modulated by the controller as a function of the duration of the adverse environmental condition sensed by the one or more sensors.
22. The apparatus of claim 13 wherein the display is mounted on packaging of the product.
23. The apparatus of claim 13 wherein the display is mounted at a remote location, and the display is in radio frequency contact with the controller, and the display is configured to serve more than one controller mounted on different product unit packages.
24. The apparatus of claim 23 wherein the display is configured as part of a portable hand-held unit that communicates with respective controllers when the portable hand-held unit is held proximally to the controllers.
25. A method for dynamically displaying and adjusting a product expiration date comprising the steps of:
- attaching an expiration date display to a product, the expiration date display
  - identifying the expiration date for the product;
  - setting a default expiration date for the expiration date display;
  - sensing one or more conditions of the product; and
  - adjusting the expiration date on the expiration date display responsive to the one or more sensed conditions of the product.

26. A method as recited in claim 25 further comprising the steps of  
setting a predetermined optimal use condition of the product;  
determining whether the product is experiencing the predetermined optimal use  
condition; and  
displaying an indication that the product is ready for optimal use when the  
product is experiencing the predetermined optimal use condition.

FOR OFFICIAL USE ONLY